

CLAIMS:

1. An impeller for an active feed paintball loader, the loader having a housing for storing paintballs, a bottom well in the housing with a paintball outlet, and a motor-driven shaft projecting upwardly into the well, the impeller comprising:
 - a hub adapted to be mounted on and rotate with the shaft in the well; and
 - a plurality of resilient arms extending outwardly from the hub and accommodating paintballs therebetween.
2. An impeller according to claim 1, wherein the arms are substantially straight.
3. An impeller according to claim 2, wherein the arms project substantially radially from the hub.
4. An impeller according to claim 3, wherein the impeller is made of neoprene.
5. An impeller according to claim 4, wherein the hub and the arms are integrally molded.
6. An impeller according to claim 3, wherein the hub and the arms are integrally molded.
7. An impeller according to claim 1, wherein the hub and the arms are integrally molded.
8. An impeller according to claim 7, wherein the impeller is made of neoprene.
9. A two-piece impeller according to claim 1, wherein the hub has an upper portion from which the arms extend, and a separate lower hub extension adapted to be mounted on the shaft, the upper portion and the lower hub extension being configured to mate with each other and not rotate relative to one another.
10. A two-piece impeller according to claim 9, wherein the upper portion of the hub and the arms are integrally formed of a first material, and the hub extension is formed of a second material that is more rigid than the first material.

11. A two-piece impeller according to claim 10, wherein the first material is neoprene.
12. A two-piece impeller according to claim 9, wherein the arms are substantially straight.
13. A two-piece impeller according to claim 12, wherein the arms project substantially radially from the hub.
14. A two-piece impeller according to claim 13, wherein the upper portion of the hub and the arms are integrally formed of a first material, and the hub extension is formed of a second material that is more rigid than the first material.
15. A two-piece impeller according to claim 14, wherein the first material is neoprene.
16. A two-piece impeller according to claim 9, wherein one of the upper portion of the hub and the hub extension has projections, and the other of the upper portion of the hub and the hub extension has recesses that mate with the projections.
17. A two-piece impeller according to claim 16, wherein the projections comprise splines.
18. A two-piece impeller according to claim 17, wherein the splines are on the hub extension, and the recesses are on the upper portion of the hub.
19. A two-piece impeller according to claim 18, wherein the projections further comprise a circumferential flange on the hub extension, and the recesses comprise a circumferential groove on the upper portion of the hub that mates with the circumferential flange.
20. A two-piece impeller according to claim 19, wherein the upper portion of the hub and the arms are integrally formed of a first material, and the hub extension is formed of a second material that is more rigid than the first material.
21. A two-piece impeller according to claim 20, wherein the first material is neoprene.

22. A two-piece impeller according to claim 21, wherein the arms are substantially straight.

23. A two-piece impeller according to claim 22, wherein the arms project substantially radially from the hub.

24. An active feed paintball loader comprising a housing for storing paintballs, a bottom well in the housing with a paintball outlet, a rotatable shaft projecting upwardly into the well, a motor for driving the shaft, and an impeller in the well mounted on and rotatable with the shaft for moving paintballs toward the outlet, wherein the impeller comprises:

a hub mounted on and rotatable with the shaft; and

a plurality of resilient arms extending outwardly from the hub and accommodating paintballs therebetween.

25. An active feed paintball loader according to claim 24, wherein the arms are substantially straight.

26. An active feed paintball loader according to claim 25, wherein the arms project substantially radially from the hub.

27. An active feed paintball loader according to claim 26, wherein the impeller is made of neoprene.

28. An active feed paintball loader according to claim 27, wherein the hub and the arms are integrally molded.

29. An active feed paintball loader according to claim 26, wherein the hub and the arms are integrally molded.

30. An active feed paintball loader according to claim 24, wherein the hub and the arms are integrally molded.

31. An active feed paintball loader according to claim 30, wherein the impeller is made of neoprene.
32. An active feed paintball loader according to claim 24, wherein the hub has an upper portion from which the arms extend, and a separate lower hub extension adapted to be mounted on the shaft, the upper portion and the lower hub extension being configured to mate with each other and not rotate relative to one another.
33. An active feed paintball loader according to claim 32, wherein the upper portion of the hub and the arms are integrally formed of a first material, and the hub extension is formed of a second material that is more rigid than the first material.
34. An active feed paintball loader according to claim 33, wherein the first material is neoprene.
35. An active feed paintball loader according to claim 32, wherein the arms are substantially straight.
36. An active feed paintball loader according to claim 35, wherein the arms project substantially radially from the hub.
37. An active feed paintball loader according to claim 36, wherein the upper portion of the hub and the arms are integrally formed of a first material, and the hub extension is formed of a second material that is more rigid than the first material.
38. An active feed paintball loader according to claim 37, wherein the first material is neoprene.
39. An active feed paintball loader according to claim 32, wherein one of the upper portion of the hub and the hub extension has projections, and the other of the upper portion of the hub and the hub extension has recesses that mate with the projections.

40. An active feed paintball loader according to claim 39, wherein the projections comprise splines.

41. An active feed paintball loader according to claim 40, wherein the splines are on the hub extension, and the recesses are on the upper portion of the hub.

42. An active feed paintball loader according to claim 41, wherein the projections further comprise a circumferential flange on the hub extension, and the recesses comprise a circumferential groove on the upper portion of the hub that mates with the circumferential flange.

43. An active feed paintball loader according to claim 42, wherein the upper portion of the hub and the arms are integrally formed of a first material, and the hub extension is formed of a second material that is more rigid than the first material.

44. An active feed paintball loader according to claim 43, wherein the first material is neoprene.

45. An active feed paintball loader according to claim 44, wherein the arms are substantially straight.

46. An active feed paintball loader according to claim 45, wherein the arms project substantially radially from the hub.